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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/713,524	11/12/2003	Steven Mark Anderson	6-17-18-166-3	9308

7590 06/24/2005

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Springtown, PA 18081

EXAMINER

LUND, JEFFRIE ROBERT

ART UNIT	PAPER NUMBER
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1763

DATE MAILED: 06/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/713,524

Applicant(s)

ANDERSON ET AL.

Examiner

Jeffrie R. Lund

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 June 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) 1-18 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 19-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>11/03</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election of Group II, claims 19-21 in the reply filed on May 6, 2005 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Priority

2. This application filed under former 37 CFR 1.62 lacks the necessary reference to the prior application. A statement reading "This is a divisional of Application No. 09/586,586, filed June 2, 2000, now US Patent 6,720,261." should be entered following the title of the invention or as the first sentence of the specification.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 19-21 rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Lamont et al, US Patent 4,756,810.

Lamont et al teaches a sputtering apparatus that includes: an actively cooled

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pedestal 24 for holding a semiconductor wafer 58; an ionized plasma generating tool 40; and a target (source) of material 38. The active cooling comprises flowing a cooling medium through cooling coils 22 and maintains the temperature of the wafer at about 150°C, which is below the tensile to compressive stress transition temperature. (Entire document) The specific wafer treated in the apparatus is an intended use of the apparatus. The apparatus of Lamont et al can inherently hold any wafer with vias adjacent to an interconnect made from aluminum, aluminum alloys, copper, or copper alloys. It has been held that "Expressions relating the apparatus to contents thereof during an intended operation are of no significance in determining patentability of the apparatus claim." Ex parte Thibault, 164 USPQ 666, 667 (Bd. App. 1969). Furthermore, "Inclusion of material or article worked upon by a structure being claimed does not impart patentability to the claims." In re Young, 25 USPQ 69 (CCPA 1935) (as restated in In re Otto, 136 USPQ 458, 459 (CCPA 1963).

Alternately, it would be obvious to use the sputtering apparatus of Lamont et al to support a wafer having vias adjacent to an interconnect made from aluminum, aluminum alloys, copper, or copper alloys (which are known in the art, see page 2 and figure 1 of the specification) on the actively cooled wafer support 24 and to deposit a material.

5. Claims 19-21 rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Wolters, US Patent 5,266,524.

Wolters teaches a sputtering apparatus that includes: an actively cooled pedestal 21 for holding a semiconductor wafer 2; an ionized plasma generating tool 23, 24, 26;

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and a target (source) of material 22. The active cooling comprises flowing a cooling medium (liquid N₂) through cooling passage 35 and maintains the temperature of the wafer at about 80 to 150°K (-193 to -123 °C), which is below the tensile to compressive stress transition temperature. (Entire document, specifically figure 5 and column 4 lines 49-57) The specific wafer treated in the apparatus is an intended use of the apparatus. The apparatus of Wolters can inherently hold any wafer with vias adjacent to an interconnect made from aluminum, aluminum alloys, copper, or copper alloys. It has been held that "Expressions relating the apparatus to contents thereof during an intended operation are of no significance in determining patentability of the apparatus claim." Ex parte Thibault, 164 USPQ 666, 667 (Bd. App. 1969). Furthermore, "Inclusion of material or article worked upon by a structure being claimed does not impart patentability to the claims." In re Young, 25 USPQ 69 (CCPA 1935) (as restated in In re Otto, 136 USPQ 458, 459 (CCPA 1963).

Alternately, it would be obvious to use the sputtering apparatus of Wolters to support a wafer having vias adjacent to an interconnect made from aluminum, aluminum alloys, copper, or copper alloys (which are known in the art, see page 2 and figure 1 of the specification) on the actively cooled wafer support 24 and to deposit a material.

6. Claims 19-21 rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Drewery et al, US Patent 6,287,435 B1.

Drewery et al teaches a sputtering apparatus that includes: an actively cooled

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pedestal 97 for holding a semiconductor wafer; an ionized plasma generating tool 450; and a target (source) of material 420. The active cooling comprises flowing a cooling medium through cooling loop of the support and maintains the temperature of the wafer at about -50°C, which is below the tensile to compressive stress transition temperature. (Entire document) The specific wafer treated in the apparatus is an intended use of the apparatus. The apparatus of Drewery et al can inherently hold any wafer with vias adjacent to an interconnect made from aluminum, aluminum alloys, copper, or copper alloys. It has been held that "Expressions relating the apparatus to contents thereof during an intended operation are of no significance in determining patentability of the apparatus claim." Ex parte Thibault, 164 USPQ 666, 667 (Bd. App. 1969). Furthermore, "Inclusion of material or article worked upon by a structure being claimed does not impart patentability to the claims." In re Young, 25 USPQ 69 (CCPA 1935) (as restated in In re Otto, 136 USPQ 458, 459 (CCPA 1963).

Alternately, it would be obvious to use the sputtering apparatus of Drewery et al to support a wafer having vias adjacent to an interconnect made from aluminum, aluminum alloys, copper, or copper alloys (which are known in the art, see page 2 and figure 1 of the specification) on the actively cooled wafer support 24 and to deposit a material.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The cited art teaches the technological background of the invention. The cited art contains patents that could be used to reject the claims under

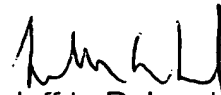
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35 USC § 102 or 103. These rejections have not been made because they do not provide any additional or different teachings, and if they were applied, would have resulted in an undue multiplication or references. (See MPEP 707.07(g))

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrie R. Lund whose telephone number is (571) 272-1437. The examiner can normally be reached on Monday-Thursday (6:30 am-6:00pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parviz Hassanzadeh can be reached on (571) 272-1435. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Jeffrie R. Lund
Primary Examiner
Art Unit 1763

JRL
6/22/05